# TBD03 – (Part 03) Carbohydrates

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. B.3.1 Describe the structural features of monosaccharides. (2)
   * What is the difference between an aldose and a ketose, and where do those names originate from?
   * Give an example of an aldose and a ketose:
   * What are the chemical formulas for glucose and fructose?
2. B.3.2 Draw the straight-chain and ring structural formulas of glucose and fructose. (1).

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|  | **Glucose** | **Fructose** |
| **Straight Chain** |  |  |
| **Ring** |  |  |

1. B.3.3 Describe the condensation of monosaccharides to form disaccharides and polysaccharides. (2)
   * How are monosaccharides joined?
   * What are the three most common disaccharides?
   * Draw each of the three, note how they differ.
   * What are the three most common polysaccharides, where are they found?
2. B.3.4 List the major functions of carbohydrates in the human body. (1)
3. B.3.5 Compare the structural properties of starch and cellulose, and explain why humans can digest starch but not cellulose. (3) *think in terms of bonding, repeating units, structure, function, solubility, state, linkages, etc*

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|  | **Differences** | **Similarities** |
| **Starch** |  |  |
| **Cellulose** |  |

* What is cellulase?

1. B.3.6 State what is meant by the term dietary fiber. (1)
2. B.3.7 Describe the importance of a diet high in dietary fiber. (2)
   * What is the importance of dietary fiber?
   * What can it help prevent (briefly describing each)?